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## Cross-border arbitrage and acquirers' returns in the Eurozone crisis

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### Highlights:

- Returns of European acquisitions are impacted by the EMU and the Eurozone crisis
- There is no cross-border effect within the EMU
- The Eurozone crisis offers extra cross-border arbitrage investment opportunities
- Abnormal returns in the crisis are driven by the cheap financial capital channel
- No evidence for the cheap assets or fire-sale hypothesis

### Abstract

Using a sample of 1,263 European acquisitions over 2004-2012, we show that the performance of cross-border acquisitions is significantly affected by the Eurozone and the euro debt crisis. First, due to financial market integration and the elimination of exchange rate risk, intra-Eurozone acquisitions do not earn any abnormal returns for bidders. Second, as a result of the euro debt crisis and the temporary misvaluation among European countries, acquisitions earn positive abnormal returns only for non-Eurozone companies acquiring Eurozone targets. These abnormal returns are driven by the depreciation of the euro and the use of low-cost capital available to overvalued acquirers.

**Keywords:** Acquisitions, European Union, Eurozone crisis, Cross-border arbitrage,  
Exchange rate, Mispricing

**JEL classification:** F15, F33, G01, G34

## Cross-border arbitrage and acquirers' returns in the Eurozone crisis

### 1. Introduction

The European Union (EU) was created in 1992 through a standardised system of laws to favour trade liberalization and free movements of capital, labour, goods and services between member states. Within the EU, the 1999 Economic and Monetary Union (EMU) was aimed at converging the economies of all member countries by, among other things, establishing a single monetary policy supervised by the European Central Bank.

Both the EU and EMU have boosted intra-European trade and investment. Indeed the creation of the Single Market increased the pool of potential takeover targets by removing the shield of state anti-takeover protection. Before the global financial crisis, European investments represented a large proportion of the global foreign direct investment (FDI) flows. Between 1999 and 2011, EU countries accounted for 40% (50%) of the global inward (outward) FDI flows.<sup>1</sup> Moreover, intra-EU FDI represented more than 60% of European FDI in the early 2000s with €400 billion flows every year.<sup>2</sup> However European FDI – both inflows and outflows – has significantly decreased since 2007 due to the deepening of the Eurozone crisis (accompanied by a lack of confidence on the part of EU investors) and the increased liberalisation and openness of many developing countries.

The 2007-2008 financial crisis has severely weakened European economies, especially countries within the Eurozone. Greece, Ireland, Portugal and Cyprus were bailed-out; Spain, Italy, France, Finland, Belgium, Netherlands and Slovenia show critical signs of macroeconomic imbalance (European Commission, 2013); and the United Kingdom is negotiating its exit from the EU. The Eurozone crisis and the unique structural relationship between European countries within a singular economic and monetary union form the context of our paper. Understanding how European companies engage in intra-EU investment

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<sup>1</sup> Source: UNCTAD 2012 Statistics

<sup>2</sup> Source: Eurostat 2012 Statistics

activities during a crisis and looking at what returns they derive from these exchanges can therefore have important implications for policy makers.

Baker *et al.* (2009) suggest that FDI flows, and in particular cross-border mergers and acquisitions (M&As), reflect arbitrage activity by multinationals. Temporary stock market misvaluation allows overvalued bidders to acquire undervalued assets or companies. For example, cross-border acquisitions can enable companies to exploit exchange rate movements, as an appreciation of the foreign currency increases the relative wealth of foreign investors. This is what happened in the summer of 2010 when the Japanese yen appreciated relative to other major currencies, leading Japanese companies to significantly increase their cross-border M&A activity.<sup>3</sup>

In this paper, we are interested in the impact of the Eurozone crisis on such cross-border arbitrage activity and performance. Indeed the Eurozone debt crisis represents a natural experiment where companies from non-crisis countries are more likely to succeed in bidding for depreciated assets within the Eurozone. Using a large sample of 1,263 European acquisitions over the period 2004-2012, we investigate the determinants of cross-border acquirers' abnormal returns. Baker *et al.* (2009) suggest that cross-border M&As may be driven either by the overvaluation of the acquirer (the cheap financial capital channel) or by the undervaluation of the target (the cheap assets channel). We test the impact of both channels on announcement returns of European acquirers. Hence our contribution is twofold. First, we provide original evidence on the impact of cross-border arbitrage on acquirers' short-term performance. To our knowledge, there is no literature investigating the impact of cross-border arbitrage activity by multinationals on the performance of M&As during the Eurozone crisis. Second, we contribute to the growing literature on fire-sale FDI and the impact of depreciated asset values within the Eurozone on cross-border acquisition activity

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<sup>3</sup> See *The Economist*, 5 August 2010, or *The New York Times*, 15 September 2010.

and performance. The rest of the paper is organised as follows. Section 2 presents the relevant literature and develops empirical predictions about the impact of the European integration and the Eurozone crisis on M&A performance. Section 3 describes the methodology and data used in this paper. In Section 4, we present and discuss our empirical findings for the univariate and multivariate analyses. Section 5 presents concluding remarks.

## **2. Literature review and hypotheses**

### *2.1. Cross-border M&A arbitrage and performance*

The research on cross-border M&As has been around for a long time, and there is still a keen interest in examining the determinants of foreign acquisitions given the liberalization of several emerging economies and the formation of many regional unions over the last few decades. Many arguments have been developed around the advantages and disadvantages of cross-border acquisitions relative to domestic transactions. On one side, foreign companies suffer several disadvantages in comparison to domestic firms. For instance, foreign companies suffer from a “liability of foreignness” in the domestic market (Zaheer, 1995) and will encounter larger asymmetries of information about the target as it is harder for them to access information on the target country’s economic and institutional conditions (Eriksson *et al.*, 1997). Moreover, foreign acquirers face higher competition for corporate control and increased agency problems, e.g. cultural clashes with the target company (Denis *et al.*, 2002, Moeller and Schlingemann, 2005). Indeed cultural differences, as well as geographic distance, increase the contracting costs associated with combining two firms across borders (Ahern *et al.*, 2015, Campa and Hernando, 2004). Consistent with this view, several empirical studies show that cross-border acquisitions underperform domestic ones, whether the acquirer is in the US (Denis *et al.*, 2002, Ghemawat, 2001, Moeller and Schlingemann, 2005) or Europe (Aw and Chatterjee, 2004, Martynova and Renneboog, 2006).

On the other side, companies can enjoy various advantages when targeting foreign firms, mostly through diversification benefits (Tallman and Yip, 2001). The theory of corporate multinationalism states that multinational firms have a greater strategic advantage in international markets due to economies of scale and scope; and that they can increase their market value by expanding their existing multinational network (Doukas and Travlos, 1988). Accordingly, bidders acquiring companies in foreign countries have been found to experience positive abnormal returns in the US (Doukas and Travlos, 1988, Francis *et al.*, 2008, Kostova *et al.*, 2008, Markides and Ittner, 1994) and in Europe (Conn *et al.*, 2005, Goergen and Renneboog, 2004). More recently, the idea of cross-border arbitrage by multinational companies has been developed and tested (Baker *et al.*, 2009). Evidence shows that the relative valuation of the bidder and target companies plays a major role in cross-border investments. A multinational corporation will take advantage of a cross-country arbitrage opportunity when temporary mispricing exists on international financial markets. One example of such mispricing is the variation of exchange rates away from interest rate parity. Indeed, cross-border acquisitions can enable companies to exploit exchange rate movements, as an appreciation of the foreign currency increases the relative wealth of foreign investors (Froot and Stein, 1991). If a firm's currency rises for some exogenous reason unrelated to its profitability, this firm would find potential foreign targets relatively inexpensive, everything else being equal. Erel *et al.* (2012) show that short-term movements between two countries' currencies increase the likelihood that firms in the country with the appreciating currency acquire firms in the country with the depreciating currency. Kang (1993) study shows that the gains to Japanese acquirers are positively related to the weakness of the foreign currency (the US dollar in their sample). Everything else being equal, a 10% increase in the value of the JPY leads to an increase of nearly 1.3% in Japanese bidder returns. Ahern *et al.* (2015) also



show that exchange rate movements have a significant impact on the combined abnormal returns of a large sample of international mergers.

Baker *et al.* (2009) go one step further by distinguishing whether foreign investments are driven by an undervaluation of the host-country assets (the cheap assets channel) or by an overvaluation of the home-country firm (the cheap financial capital channel). The cheap assets channel refers to the purchase of host-country assets at a price below fundamental value. Undervaluation in the target country can have various sources: a collapse in investor sentiment, a shift in risk aversion, a liquidity crisis, etc. In a liquidity crisis, low valuations might be driven by the perceived inability of local firms to pursue domestic investment opportunities. This channel is consistent with the “fire-sale” hypothesis where companies from crisis-afflicted countries are sold to foreign investors at discounted prices due to the tightening of credit conditions and the rapid deterioration in macroeconomic conditions (Alquist *et al.*, 2013, Krugman, 2000). According to the cheap financial capital hypothesis, cross-border acquisitions are the result of an opportunistic use of the temporarily low-cost financial capital available to overvalued firms. In other words, foreign acquirers may find cross-border acquisitions relatively cheap when they have easier access to affordable financial capital. It is worth noting that this cheap capital channel works for both stock-financed and cash-financed acquisitions, as overpriced equity can also reduce the cost of debt (Baker *et al.*, 2009). This hypothesis is consistent with cross-country differences in stock market development and the market for corporate control. There is evidence that the ability of an economy to reallocate the control over corporate assets is related to the development of stock markets. Moreover, the more developed the stock market, the easiest and cheapest the raising of external funding, particularly to finance a takeover. When a developed-country multinational firm acquires majority control of an emerging-market firm, it experiences positive and significant abnormal returns (Chari *et al.*, 2010). Similarly, Goergen and

Renneboog (2004) find that UK acquirers, because of a bigger market for corporate control, perform better than other European companies in their foreign acquisitions. Indeed the UK is characterised by a high degree of disclosure, a liquid and well-developed equity market. As 85% of the companies listed on the London Stock Exchange are widely held, there is an active market for corporate control (Goergen and Renneboog, 2001, Martynova and Renneboog, 2011). In contrast, the number of listed firms in Continental Europe is much lower, and most of them have concentrated ownership or control.

Baker *et al.* (2009) test the cheap assets and cheap financial capital hypotheses on a large sample of cross-border M&As from and into the US over the period 1975-2001. Measuring misvaluation of the host- and home-countries by their market-to-book ratios, the authors find evidence for the cheap financial capital hypothesis but not for the cheap assets hypothesis. In other words, cross-border M&As are driven by home-country stock market valuations rather than low target valuations.

In this paper, we test the foreign investment arbitrage hypothesis in the context of the Eurozone crisis: Is cross-country arbitrage more profitable for acquirers during the crisis? However, first, we need to take into account the existence of an economic and monetary union within Europe. Because of financial market integration and cross-border trade barriers relaxation, Eurozone countries are now competing for an increased pool of potential takeover targets (Coeurdacier *et al.*, 2009), along with the elimination of risks and costs associated with different national currencies.

## *2.2. Performance of acquisitions in the Eurozone crisis*

### *2.2.1. Impact of the Eurozone*

With the introduction of the euro, financial markets are more integrated, and other regulatory provisions have been harmonised to reduce cross-border trade barriers (Ekkayokkaya *et al.*, 2009). Indeed, financial integration helped in the reduction of cost of

capital, the removal of exchange rate risk, the integration in post-trading market infrastructure and the creation of shared common trading platforms.<sup>4</sup> Overall, there is strong evidence of macroeconomic convergence and stock market integration within the Eurozone (Allen and Song, 2005, Kim *et al.*, 2005). Other EU countries (such as the UK) show no such increase in stock market integration (Hardouvelis *et al.*, 2006). Coeurdacier *et al.* (2009) investigate the impact of the adoption of the euro on cross-border M&As among Eurozone members and with the rest of the world. Over the period 1999-2004, the authors find that the Eurozone increased intra-euro area cross-border horizontal M&A activity in the manufacturing sector by 200%. Similarly, it has been shown that M&A efficiency gains are stronger for cross-Eurozone transactions and that there is no significant difference between European and domestic acquisitions (Bertrand and Zitouna, 2008).

Hence we argue that the benefits of international diversification discussed above are not relevant within the economic and monetary union which constitutes the Eurozone. In other words, multinational companies cannot benefit from cross-border acquisitions within the Eurozone and the advantages of cross-border acquisitions, if any, would only pay in cross-Eurozone transactions. There is evidence of the impact of the Eurozone on acquirers' performance in the banking industry. Before 1999, European banks acquiring foreign targets within the EU were able to earn positive abnormal returns (Cybo-Ottone and Murgia, 2000, Ekkayokkaya *et al.*, 2009). However, with the introduction of the euro and the integration of financial markets, Eurozone banks acquiring foreign targets within the euro area were not able to earn any significant announcement returns (Ekkayokkaya *et al.*, 2009). This decrease in abnormal returns was evidenced for Eurozone M&As only. Thus, similar to previous evidence in the banking industry, we do not expect to find any significant difference in

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<sup>4</sup> As a matter of fact, there has been a consolidation of stock exchanges over the last few decades which undeniably helped the flow of equity capital within the Eurozone and beyond. For instance, Euronext Group is the merging of stock exchanges in Belgium, France, Netherlands and Portugal (it is now merged with NYSE).

announcement returns between domestic and cross-border acquisitions within the Eurozone. Moreover, these announcement returns should be statistically insignificant.

*H1: Cross-border acquisitions within the Eurozone do not differ from domestic acquisitions and do not offer any abnormal returns.*

### *2.2.2. Impact of the crisis*

As a consequence of the global financial crisis of 2007-2008, all European countries entered into economic recession between the first quarter of 2008 and the first quarter of 2009 (Claessens *et al.*, 2010), and Eurozone members were dragged into a severe sovereign debt crisis. Many countries were downgraded, and borrowing rates shot up. Some countries were more affected than others, in particular, the so-called PIIGS countries (Portugal, Ireland, Italy, Greece and Spain). Equity and debt financing for M&A transactions became more difficult and expensive during the crisis (UNCTAD, 2009). Although the financial crisis has been found to significantly impact M&A activity in the European banking sector (Beltratti and Paladino, 2013), there is no research to date on the impact of the Eurozone crisis on M&A activity and performance in other industries. Yet, according to UNCTAD (2009), worldwide M&A activity has been strongly affected by the crisis.

Throughout a crisis, a strong company may exploit the benefits of low-price acquisitions of crisis-afflicted targets. Indeed a crisis hits negatively the countries that experience it, but it also provides great investment opportunities for foreign (non-crisis) investors who can purchase distressed domestic companies at a discount (Froot and Stein, 1991, Krugman, 2000, Mody and Negishi, 2000). Also, in a crisis, not only does FDI significantly increase in the crisis region (mostly in the form of foreign acquisitions from non-crisis countries) but intra-national M&A activity declines in the crisis area (Aguar and Gopinath, 2005). A reduction in the number of potential bidders and an increase in the number of potential targets, typical of crisis periods, would allow stock prices to more clearly

reflect advantages for foreign acquirers. Finally, potential bidders may conceive of an acquisition only if they are strong companies. National regulators are unlikely to allow an acquisition if the bidder is short of capital and/or liquidity, especially in crisis period (Beltratti and Paladino, 2013). Hence, an acquisition announcement at times of crisis may be interpreted as a signal of financial health. In summary, the Eurozone crisis offers extra cross-border investment opportunities due to large differences in valuation between acquirers and targets.

We test our argument by developing two sub-hypotheses. As a preliminary analysis, we test whether non-Eurozone acquirers targeting Eurozone countries gain positive abnormal returns during the crisis. Non-Eurozone companies are more likely to succeed in bidding for Eurozone companies as a result of reduced competition from other potential domestic acquirers in the Eurozone. Hence, we expect that, during the crisis, acquisitions from non-Eurozone acquirers to Eurozone countries will provide an abnormal return compared to similar acquisitions announced before the crisis.

*H2a: Cross-border acquisitions from non-Eurozone to Eurozone countries perform better during the crisis than before the crisis.*

According to the foreign exchange rate argument, a depreciation of the local currency increases the relative wealth of foreign investors (Froot and Stein, 1991). This argument is of high relevance in the case of the Eurozone crisis. Aguiar and Gopinath (2005) and Mody and Negishi (2000) emphasized the role of exchange rate depreciation in M&A activity during the Asian crisis. Since 2008, the value of the euro currency against other major currencies is very low compared to its pre-crisis average (see for instance the EUR/GBP exchange rate in Figure 1). In addition to increasing the likelihood that non-Eurozone companies acquire firms in the euro area, the Eurozone crisis should also increase the probability that the gains to non-Eurozone acquirers are positively related to the weakness of the euro. Hence we test whether

the Eurozone crisis drives and/or sharpens the foreign exchange rate result found in previous literature.

[Figure 1 here]

*H2b: Companies in countries with an appreciating currency acquiring companies in countries with a depreciating currency will earn higher abnormal returns during the crisis than before the crisis.*

We further test the cross-country arbitrage hypothesis by investigating the source of the abnormal returns. We test the cheap financial capital and the cheap assets hypotheses by measuring the overvaluation of the acquirer and the undervaluation of the target separately. Baker *et al.* (2009) find evidence for the cheap financial capital hypothesis but not for the cheap assets hypothesis. That is foreign acquisitions are driven by the use of relatively low-cost capital available to overvalued companies in the home country rather than by the relative undervaluation of the target company. The implication for M&A performance is that foreign acquirers' abnormal returns are driven by their easy access to cheap capital rather than by the degree of undervaluation of the target. It is important to test this hypothesis in the context of the crisis as many Eurozone companies have experienced financial distress and as a result, have been targeted by financially sounder multinationals. During the crisis, assets and companies are cheaper in the euro area compared to assets outside the Eurozone, due to several factors such as unfavourable exchange rates, a drop in confidence, a liquidity crisis and fewer growth opportunities (Baker *et al.* 2009). This is the cheap assets channel. Moreover, in the crisis period, the cost of capital is higher in Eurozone than in non-Eurozone countries, implying that non-Eurozone acquirers are more competitive than domestic companies when valuing targets in Eurozone countries. Since financial markets are not fully integrated (especially across different currencies), acquiring firms from various countries will evaluate an acquisition using a different risk premium and hence a different discount rate.

Hence we argue that the risk premium and cost of capital for non-Eurozone acquirers was much lower than for Eurozone companies in the crisis period, giving them a strong advantage in valuing potential targets. This is the cheap capital, or expensive capital from the perspective of Eurozone acquirers, channel.

*H3: Acquirers' abnormal returns during the crisis are driven by their use of cheap financial capital rather than by the undervaluation of target companies.*

It is worth noting that the two mispricing hypotheses are not mutually exclusive, as both effects could work simultaneously to increase bidders' returns.

### **3. Methodology and data**

#### *3.1. Event study*

To assess the short-term performance of acquirers, we use a standard event study methodology by computing daily abnormal returns around the acquisition announcement date (Brown and Warner, 1985). Following Bouwman *et al.* (2009) and Rao-Nicholson and Salaber (2013), we use the modified market model which defines daily abnormal returns as the difference between the acquirer's return and the market return:

$$AR_{it} = R_{it} - R_{mt}, \quad (1)$$

where  $R_{it}$  is the daily return on the acquirer and  $R_{mt}$  is the daily return on the market. The event study methodology assumes that stock markets are efficient, i.e., any new information is instantaneously incorporated in stock prices. Hence, M&A event studies, especially in developed markets, generally use very short event windows around the announcement date. We used various event windows from

-5 days to +5 days around announcement date and the results presented in this paper are based on a [-2; +2] event window.<sup>5</sup> We compute the cumulative abnormal return (CAR) of each acquisition by summing the daily abnormal returns over this 5-day event window:

$$CAR_i = \sum_{t=-2}^{+2} AR_{it} \quad (2)$$

To assess the impact of the Eurozone crisis on acquirers' abnormal returns, we average these CARs over two sub-periods, before the crisis and during the crisis. We start the Eurozone crisis period (CRISIS dummy hereafter) from March 2009 for various reasons. First, all European countries entered into economic recession between the first quarter of 2008 (Estonia, Ireland and Latvia being the first) and the first quarter of 2009 (Cyprus being the last) (Claessens *et al.*, 2010). Second, March 2009 corresponds to the end of the stock market crash following the global banking crisis, so we exclude this period of high stock market volatility and business uncertainty in our analysis. Third, the period 2009-2012 corresponds to the period when the EUR/GBP exchange rate has stabilized at a relatively low level compared to its long-term average (see Figure 1).

### 3.2. Multifactor analysis of CAR

In order to investigate the determinants of these abnormal returns, we run a series of cross-sectional regressions controlling for well-known factors affecting the performance of M&As. Our first independent variable is CROSS-BORDER, a dummy variable equal to one for all foreign transactions. We do not expect this variable to have a significant impact on CAR (H1). Among cross-Eurozone transactions, only the acquisitions from a non-Eurozone country to a Eurozone country should provide positive returns (H2a); hence we use the NEUR-EUR dummy for these deals and expect the coefficient to be significantly positive during the Eurozone crisis.

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<sup>5</sup> See section 4.3 for a discussion of alternative event windows and estimation technique.



To test H2b, we need a measure of foreign exchange rate variation. Following Cakici *et al.* (1996), Eun *et al.* (1996) and Kang (1993), we calculate the relative strength of the exchange rate (EXCH) as the deviation of the foreign exchange rate at the time of the acquisition announcement from its long-term average:

$$EXCH = \frac{FX_t - \overline{FX}}{\overline{FX}} \quad (3)$$

where  $FX_t$  is the foreign exchange rate at announcement date and  $\overline{FX}$  is the average exchange rate over the past 12 months.

To further investigate the cross-country arbitrage hypothesis, we use several measures of cheap financial capital and cheap assets (H3). On one side, we measure the acquirer's facility to finance a foreign takeover with three variables. First, bidding companies with high price-to-book ratios will find it easier to access financial capital. Hence PTB is the acquirer's price-to-book ratio at announcement date. Second, we use a UKBIDDER dummy equal to one if the acquirer is a UK company. This dummy is justified by several empirical studies showing that UK acquirers, due to well-developed and liquid stock markets, and hence a bigger market for corporate control, perform better than other European companies in their foreign acquisitions. Finally, MARKET/GDP(A) is the stock market capitalisation of the acquirer's country, as a percentage of national GDP, and measures the size and level of development of the national stock market. All three variables should have a positive impact on CARs during the Eurozone crisis.

On the other side, we measure the target's undervaluation (or level of financial distress) using four country-level variables.<sup>6</sup> PIIGS is a dummy variable for Portugal, Ireland, Italy, Greece and Spain, considered to be more afflicted by the Eurozone crisis than other countries (Beetsma *et al.*, 2013, Kalbaska and Gątkowski, 2012). ESI is the Economic Sentiment Index in the target country at announcement date. MARKET/GDP(T) is used here

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<sup>6</sup> As our sample includes a large number of private target companies (almost half), it is difficult to collect firm-level financial data without significantly reducing the sample.

as a valuation measure for the target's national stock market. GOVBOND is the 10-year government bond yield of the target country at announcement date. According to our hypothesis, all these alternative measures of target's financial distress should not impact acquirers' returns, or to a lesser extent.

Furthermore, we control for deal-specific and bidder-specific characteristics. Deal-specific variables that are known to impact announcement returns include the size of the transaction, the mode of payment, the percentage acquired in the transaction, the public status of the target and the industry relatedness (Ahern *et al.*, 2015, Beitel *et al.*, 2004, Campa and Kedia, 2002, Faccio and Masulis, 2005, Goergen and Renneboog, 2004, Moeller *et al.*, 2004). We measure the relative size of the transaction (RELATIVESIZE) as the deal value (DEALVAL) divided by the bidder's market value (MV). CASH is a dummy equal to one if the deal is entirely cash-financed, zero otherwise. PERCACQ is the percentage stake acquired during the transaction. PRIVATE is a dummy variable which equals one if the target is a private company, zero otherwise. SAMEIND is a dummy which represents the industry relatedness of both companies, i.e., SAMEIND=1 if both the acquirer and the target belong to the same industry. As bidder-specific control variables, we use the acquirer's market value (MV) at announcement date (Moeller *et al.*, 2004) as well as industry dummies. Finally, in the cross-border analysis, we also include a variable controlling for the difference in GDP between the home and host countries (DIFFGDP).

### *3.3.Data collection and descriptive statistics*

Our sample includes 1,263 European acquisitions meeting the following criteria: (i) the deal was completed between 2004 and 2012, (ii) the acquirer is a publicly listed company, (iii) the percentage owned after the transaction is higher than 50% of the target value, (iv) the acquirer and the target both belong to the EU and at least one counterparty belongs to the Eurozone. We excluded all deals within the financial sector and all transactions for which the

deal value was not available or was smaller than \$10 million. We also deleted the deals for which no stock return data was available around the announcement date. Overall, our sample covers 22 EU countries, including 16 Eurozone countries.

Table 1 shows the number of deals for each pair of bidder/target countries. We distinguish between Eurozone and non-Eurozone countries, and between domestic (in grey) and cross-border acquisitions. Cross-Eurozone deals represent one third of our total sample and 60% of the cross-border sample. France and UK are the biggest acquirers' countries, and the most targeted countries are France and Germany. Among cross-Eurozone transactions, UK companies buying into Germany represent the largest proportion of deals. The fact that 26% of acquirers in our cross-border sample are from the UK is consistent with the idea that the UK is a big and active market for corporate control.

[Table 1 here]

We collected acquisition data from Thomson One which provides information about the deal value, the acquirer/target SIC code, the target status, the method of payment and the percentage acquired during the transaction. The financial data for each acquirer comes from Thomson DataStream. We collected daily stock returns, market values, and price-to-book ratios, as well as daily market index returns and exchange rates.<sup>7</sup> Annual data for market-GDP ratios comes from the World Bank, and monthly Economic Sentiment Indicators (ESI) originate from the European Commission (Directorate-General for Economic and Financial Affairs). We also collected monthly data on harmonized 10-year government bond yields, as well as annual GDP data (to calculate DIFFGDP), from Eurostat.

Table 2 reports the mean and median values of deal-specific and bidder-specific variables used in this study. The statistics are reported for two sub-periods (pre-crisis and

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<sup>7</sup> We used the following market indices for each acquirer's country: ATX (Austria), BEL20 (Belgium), OMX Copenhagen 20 (Denmark), OMX Tallinn (Estonia), OMX Helsinki 25 (Finland), CAC40 (France), DAX30 (Germany), ATHEX Composite (Greece), ISEQ (Ireland), FTSE MIB (Italy), OMX Vilnius (Lithuania), Luxembourg SE General (Luxembourg), AEX (Netherlands), PSI20 (Portugal), IBEX35 (Spain), OMX Stockholm 30 (Sweden), FTSE 100 (UK) and DataStream-calculated indices for Poland and Slovenia.

crisis) and for four categories of deals: domestic acquisitions within the euro area (e.g. Spanish company buying in Spain), cross-border acquisitions within the eurozone (e.g. Spanish company buying in France), cross-border deals from a Eurozone country to a non-Eurozone country (e.g. Finnish company buying in Sweden) and cross-border deals from a non-Eurozone country to a Eurozone country (e.g. UK company buying in Italy). Interestingly NEUR-EUR acquirers have particular characteristics. These non-Eurozone acquirers in the crisis period are overvalued companies (high price-to-book ratio) compared to other European acquirers, even though they are not particularly large enterprises (average market value is lower than for Eurozone bidders). Moreover, the average value of NEUR-EUR deals is the only that increased during the crisis, implying that non-Eurozone companies are now able to acquire large target companies in the Eurozone. This is the case, for instance, of Anglo American PLC acquiring in 2012 Oppenheimer family's 40% interest in De Beers for \$5.1 billion, increasing its holding in the leading diamond company to 85%.

[Table 2 here]

Table 3 reports the correlation coefficients (and statistical significance) between our dependent, independent and control variables. Panel A presents the correlation coefficients over the entire sample of 1,263 deals; Panel B reports the coefficients for the sample of cross-border acquisitions only (total of 696 deals over 2004-2012) and Panel C reports the coefficients for the reduced sample of cross-border acquisitions over the crisis period (203 deals over 2009-2012). In panel C, CAR is positively correlated with our explanatory variables measuring exchange rate movements and bidder's country valuation. The fact that NEUR-EUR is strongly correlated with UKBIDDER is expected as the UK represents most of our cross-Eurozone deal sample. NEUR-EUR is also highly correlated with MARKET/GDP(A), which implies that confounding effects might be at stake and NEUR-EUR dummy cannot be used in combination with acquirer's country variables.

[Table 3 here]

#### **4. Empirical results**

##### *4.1. Univariate analysis*

Table 4 gives the average cumulative abnormal returns (CARs) for the pre-crisis and the crisis periods across the four categories of deals presented in Table 2. We also perform a Student test in order to compare the statistical difference between each pair of CARs. The average CAR is positive for all categories of deals and is statistically the same for all deals within the Eurozone (domestic and cross-border) and across the two sub-periods (ranging between 1.3 and 1.9%). Hence we do not find in Europe the cross-border effect previously emphasized in the literature. However comparing CARs for cross-Eurozone deals before and during the crisis shows significant differences. For EUR-NEUR acquisitions, the average CAR during the crisis (0.56%) is four times lower than before the crisis (2.46%). Interestingly figures are inverted for NEUR-EUR transactions: the average CAR during the crisis (3.42%) is twice higher than before the crisis (1.61%). Comparing EUR-NEUR and NEUR-EUR acquisitions in the crisis period, the difference in CAR (+2.86%) is significant at the 1% level. These results are consistent with the idea that only non-Eurozone acquirers targeting Eurozone countries benefited from the Eurozone crisis through abnormal shareholder returns.

[Table 4 here]

##### *4.2. Multivariate analysis*

We test our hypotheses on three different samples: the entire sample of 1,263 deals (domestic and cross-border transactions over the period 2004-2012); the sample of 696 deals (cross-border acquisitions only over 2004-2012); and the sample of 203 deals (cross-border acquisitions over the crisis period only). Results of the cross-sectional regressions of CAR[-2;+2] are presented in Tables 5, 6, and 7 respectively. All regressions include unreported

industry dummies based on the acquirer's SIC classification. The regression R-squares increase as we reduce the sample size and Table 7 exhibits the highest R-squares (up to 18%). Note that in the multivariate analysis we lose few observations for which some variables are missing.

Overall, our control variables react consistently across all model specifications: CASH and MV have a negative impact on CARs and RELATIVESIZE has a strong and positive impact. The negative impact of cash-financed transactions is consistent with models of uncertainty in target valuation (Eckbo and Thorburn, 2000). Market value being negative is in line with the managerial hubris hypothesis (Beitel *et al.*, 2004, Moeller *et al.*, 2004, Roll, 1986). Positive relative size is consistent with more information and fewer adverse selection problems (Campa and Hernando, 2004, Conn *et al.*, 2005). Industry dummies (not reported) do not have any significant impact on CARs.

In Table 5, model (1) includes only the control variables. As we are interested in the return impact of our independent variables during the Eurozone crisis, we regress CARs on the interaction between CRISIS and each explanatory variable. In model (2), CROSS-BORDER\*CRISIS is not statistically significant, confirming the fact that the crisis did not significantly and homogeneously affect all cross-border acquisitions and that a further distinction is needed. It is worth noting that the coefficient for CROSS-BORDER is not statistically significant either, supporting the view that there is no cross-border effect (whether positive or negative) across our sample of European deals (Campa and Hernando, 2004). Similarly, the coefficient for NEUR-EUR in model (3) is not significant, meaning that before the crisis, non-Eurozone bidders neither benefited nor were penalised from acquiring Eurozone companies. More interestingly, NEUR-EUR\*CRISIS is significantly positive, which is consistent with our hypothesis that non-Eurozone acquirers can achieve abnormal returns when targeting crisis-afflicted Eurozone countries after 2009. Models (4) and (5)

provide preliminary evidence for H3.  $PIIGS*CRISIS$  is not statistically different from zero, whereas  $PTB*CRISIS$  is positive and highly significant, suggesting that overvalued acquirers (with a high price-to-book ratio) can achieve positive abnormal returns during the crisis. However, the level of financial distress of target companies (proxied by  $PIIGS$ ) doesn't seem to bring abnormal returns to foreign bidders. These results are preliminary and further analysis, including country-level variables, will now be conducted on the reduced sample of cross-border deals only.

[Table 5 here]

In Table 6, the sample period is the same (2004-2012), but we concentrate on cross-border deals. This allows us to include country-specific variables in the model and explains the positive abnormal return for NEUR-EUR transactions. Hence we include  $DIFFGDP$  in the control variables and we test for several country-level explanatory variables.

Model (1) tests for the exchange rate hypothesis and finds strong support for the argument that exchange rate movements significantly impact bidders' announcement returns during the crisis ( $EXCH*CRISIS$  significantly positive). Everything else being equal, a 10% increase in the value of the foreign currency leads to an increase of 0.22% in foreign bidder returns in the non-crisis period (although not statistically significant) plus a significant 3.3% extra return in the crisis period. In models (2)-(4), we test the cheap financial capital argument with alternative measures of acquirer's overvaluation or easy access to cheap capital. Overall, we find strong support for H3, as all three variables have a positive and significant impact on CARs during the crisis.  $PTB$  and  $UKBIDDER$  have the most significant impact, which is consistent with Goergen and Renneboog (2004) who find that UK acquirers perform better than other European companies in their foreign acquisitions (although our effect is significant only during the crisis period). The  $MARKET/GDP(A)*CRISIS$  coefficient is significant only at 10%. Results confirm that acquirers using cheap capital to

finance cross-border investments and/or overvalued acquirers can earn abnormal positive returns during the Eurozone crisis (but not before the crisis). In models (5)-(8), we test the cheap assets argument and do not find any evidence that acquirers' abnormal returns are driven by target companies' undervaluation. Whether we measure the financial distress of the target with a dummy variable (PIIGS), with economic sentiment, stock market valuation or long-term interest rates, the interaction of each variable with the CRISIS dummy is statistically insignificant. This result is inconsistent with the fire-sale argument of Krugman (2000) but validates previous evidence on foreign investment arbitrage (Baker *et al.*, 2009). Our conclusions remain unchanged when all variables are included in the same model (9).<sup>8</sup> Here PTB has the strongest impact on CARs.

[Table 6 here]

Table 7 is similar to Table 6 as it reports regression estimates for the same model specifications but over a reduced sample period covering the Eurozone crisis period only (from March 2009 to December 2012). Results are qualitatively and quantitatively similar to Table 6 and strongly support our hypotheses. All explanatory variables in models (1)-(4) have a positive and significant impact on CARs, whereas independent variables in models (5)-(8) do not significantly impact acquirers' abnormal returns during the crisis. Even though the number of observations has significantly decreased from Table 6 to Table 7, the latter analysis is most relevant as it focuses on the period of interest (Eurozone crisis period) and discards the tumultuous years of stock market crashes. As a matter of fact, R-squares have tripled from Table 6 to Table 7.

[Table 7 here]

In summary, we find strong evidence that the performance of European acquisitions is significantly affected by the combined effect of the EMU and the Eurozone crisis. All our

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<sup>8</sup> We do not include MARKET/GDP(A) as it is highly correlated with UKBIDDER.



predictions are supported by the empirical analysis presented in this paper. First, there is no cross-border effect within the Eurozone as companies are not able to earn positive abnormal returns when acquiring targets within the EMU. Second, only cross-border acquisitions from non-Eurozone to Eurozone countries announced during the crisis can earn significant abnormal returns for the bidder's shareholders. Third, these abnormal returns are driven by acquirers' overvaluation and use of cheap financial capital rather than by targets' undervaluation. British companies and other multinationals with high price-to-book ratios can earn higher abnormal returns during the Eurozone crisis. The relative level of exchange rates also has a significant impact on CARs. Everything else being equal, a 10% increase in the value of the bidder's currency leads to an increase of 3.5% in bidder returns.

#### *4.3. Robustness tests*

Corporate governance is related to the market for corporate control: In stronger legal and institutional environments, corporate control markets are more active and competitive (Rossi and Volpin, 2004). With high investor protection, there are low private benefits of control, and there is an active market for corporate control (Dyck and Zingales, 2004, Nenova, 2003). La Porta *et al.* (2000) suggest that corporate governance improvements may result in acquisitions being more efficient if the bidder is located in a common law country, i.e., with strong investor protection. Moreover, the governance system of the acquirer's country can make a significant difference in announcement returns. With control, acquirers can improve the target value by sharing better institutional and corporate governance practices. Hence the ability of acquirers to bring better corporate governance to targets can drive value gains for the acquirer shareholders. Francis *et al.* (2008), Kuipers *et al.* (2009), Chari *et al.* (2010) and Feito-Ruiz and Menéndez-Requejo (2011) find that companies located in high investor protection countries financially benefit from acquisitions in countries with a weak legal environment. During a crisis, companies located in a country with a weak

regulatory regime will face higher risks in their foreign acquisitions and potentially negative abnormal returns (Beltratti and Paladino, 2013, Vallascas and Hagendorff, 2011). Conversely, bidders located in a strong regulatory system country will achieve positive gains when targeting weaker regulatory system countries. Hence, we expect that companies located in high investor protection countries should benefit from acquisitions in countries with a weak legal environment, especially if they target a crisis-afflicted country. It is worth noting that the UK is characterised by a relatively high degree of shareholder protection (La Porta *et al.*, 1997), which is consistent with the abnormal returns we find for UKBIDDER during the Eurozone crisis.

We proxy the level of investor protection in the home and host countries by their legal system (Rossi and Volpin, 2004). López de Silanes *et al.* (1998) suggest that the legal origin of a country is a broad indicator of investor protection and show that countries with a common law system better protect minority shareholders than do civil law countries. The legal regime of each country is provided in the CIA World Factbook. We use two dummies to test for the impact of the legal system on announcement returns. First, WEAKERLAW equals one for all deals where the acquirer is located in a common law country and the target is located in a civil law country. Second, we use the dummy COMMONLAW, which is equal to one when the acquirer is located in a common law country (Ireland and UK). As expected, both WEAKERLAW and COMMONLAW are highly correlated with UKBIDDER (around 85%). Results of the cross-sectional regressions on the reduced sample of cross-border deals are presented in Table 8. We run the analysis over the entire sample period, 2004-2012 (Panel A) and over the 2009-2012 crisis period (Panel B). Overall, acquirers located in a strong investor protection country (i.e., common law country) benefit from targeting companies located in a weak investor protection country (with a civil law system) during the Eurozone crisis. The abnormal returns arising from the difference in legal systems between the bidder

and the target companies is driven by the acquirer's legal system (being a common law system). These results are consistent with our hypotheses, in particular with the fact that UK bidders enjoy abnormal returns when targeting Eurozone companies during the crisis.

[Table 8 here]

We also run additional robustness checks which we summarize here.<sup>9</sup> First, we have run the analysis by including the stock market crash in the CRISIS dummy, i.e., starting the Eurozone crisis period in November 2007. Conclusions remain unchanged. We have also run the analysis by including year dummies to control for potential time effects. The year coefficients are not significant, and all other coefficients are virtually identical. Second, we have used alternative measures of cumulative abnormal returns (CARs), by modifying the event window and/or the estimation method. On one side, we have calculated CARs over  $[-1;+1]$  and  $[-5;0]$  around the announcement date. On the other side, instead of using the modified market model, we have estimated daily abnormal returns using the market model over a 180-day estimation period. All these alternatives report consistent results. Overall, the variable EXCH is less (or not) significant, whereas PTB and UKBIDDER are still positive and strongly significant.

Finally, we use alternative proxies for the cheap financial capital and cheap assets arguments. Just as we use 10-year government bond yields to measure the macroeconomic risk of the target country (GOVBOND), we use the same variable for the acquirer's country to measure the level of interest rates, i.e., the ability of the acquirer to access cheap capital. The coefficient for this variable is negative and significant at the 5% level. This implies that the lower the interest rate, the higher the acquirer's abnormal return, which is consistent with the cheap capital hypothesis. For the cheap assets argument, we measure the economic risk of the target country with another variable which is the sovereign debt rating provided by

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<sup>9</sup> Conclusions are based on the reduced sample of cross-border deals during the 2009-2012 crisis period. Detailed results are available from the authors upon request.

Standard & Poor's. This variable is highly correlated with GOVBOND (81%), and, consistent with the results presented in this paper, it does not significantly impact acquirers' abnormal returns.

## 5. Conclusion

Our paper is the first to investigate the impact of cross-country arbitrage on acquirers' returns in the context of the Eurozone crisis. Previous evidence shows that cross-border M&A activity is driven by multinationals' use of cheap capital to finance their foreign investments, and not so much by the temporary undervaluation of the target company (Baker *et al.*, 2009). We test this hypothesis in the context of the European Economic and Monetary Union (EMU), by examining the impact of the recent Eurozone crisis on the short-term performance of European acquirers. Using a sample of 1,263 deals from 22 EU countries, we find that only non-Eurozone acquirers buying in Eurozone countries profit from the crisis through abnormal shareholder returns. First, when the acquirer's home currency appreciates in the crisis period, the abnormal return associated with the deal significantly increases. Second, acquirers' ability to raise cheap capital and acquirers' overvaluation have a significant impact on their abnormal returns during the Eurozone crisis. This is consistent with the cheap financial capital hypothesis. However, we do not find support for the cheap assets hypothesis, or fire-sale hypothesis, where acquirers financially benefit from targeting crisis-afflicted, financially distressed companies.

Overall, these results have implications for both local and international investors and insightful managerial upshots. Multinationals involved in cross-Eurozone acquisitions during the current Eurozone crisis are likely to derive higher returns from their investment than those acquisitions announced before the crisis. Acquirers, as theory implies, can gain higher returns from cross-border acquisitions of low-priced high-value targets, yet, our study presents a cautionary note. Foreign acquirers' abnormal returns are driven by their overvaluation and

use of cheap financial capital rather than by targets' undervaluation. However, the regional monetary impact of the Eurozone which might stop euro area companies from maximizing their returns from acquisitions should be taken into consideration by their managers. Also, policy makers may be tempted to induce an acquisition-friendly environment which is conducive to cross-Eurozone M&As. Indeed, our results suggest that policymakers in the UK might be tempted to stay in the EU and hold their valuable, strong currency.

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Figure 1

## EUR/GBP exchange rate

This figure shows the EUR/GBP exchange rate over the period 2003-2012. Daily data was collected from Thomson DataStream.

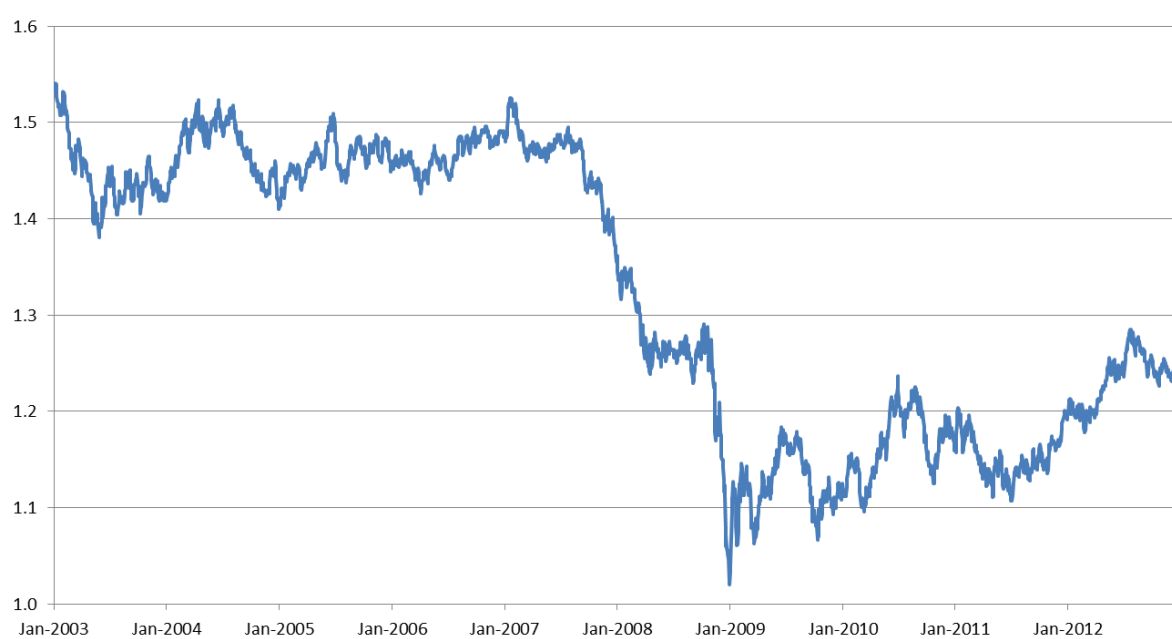


Table 1

## Sample distribution

This table reports the number of deals in our sample by acquirer and target country. We distinguish between Eurozone and non-Eurozone countries. Domestic deals within the Eurozone are highlighted in grey.

		Eurozone target																Non-Eurozone target						Total
		AU	BE	CY	ES	FI	FR	DE	GR	IR	IT	LI	LU	NL	PO	SL	SP	CZ	DK	HU	PL	SW	UK	
<b>Eurozone bidder</b>																								
AU	Austria	6					1	6		2	2			2		1					1	1	2	<b>24</b>
BE	Belgium		28				20	2		1	3		3		1		2						8	<b>68</b>
CY	Cyprus																							<b>0</b>
ES	Estonia				1	1																		<b>2</b>
FI	Finland	1			2	33	3	9			2			2				1	2		3	12	4	<b>74</b>
FR	France		7			1	154	23	1		8			11			15	1	1		4	3	14	<b>243</b>
DE	Germany	3	1			1	9	84			4		1	13			2	2	3	1	1	1	14	<b>140</b>
GR	Greece	1		2					20		2													<b>25</b>
IR	Ireland	1						3		15				6					2			2	26	<b>55</b>
IT	Italy		3				6	10		1	79		2	4			6					1	10	<b>122</b>
LI	Lithuania				1							3									1			<b>5</b>
LU	Luxembourg								1														1	<b>2</b>
NL	Netherlands	3	4			2	8	5		1	2			39			1	1	1		1	5	17	<b>90</b>
PO	Portugal							1			1				19		4							<b>25</b>
SL	Slovenia								1							2								<b>3</b>
SP	Spain	2	2				5	6	2		12				4		85	1			2	1	8	<b>130</b>
<b>Non-Eurozone bidder</b>																								
CZ	Czech Republic																							<b>0</b>
DK	Denmark					1	1	2						3			1							<b>8</b>
HU	Hungary																							<b>0</b>
PL	Poland	1						1					1				3							<b>6</b>
SW	Sweden	3	1		1	8	7	19		1	1	2		10		1	6							<b>60</b>
UK	United Kingdom	2	7	1		3	31	56	2	22	18		1	20	1		17							<b>181</b>
<b>Total</b>		<b>23</b>	<b>53</b>	<b>3</b>	<b>5</b>	<b>50</b>	<b>245</b>	<b>227</b>	<b>27</b>	<b>43</b>	<b>134</b>	<b>5</b>	<b>8</b>	<b>110</b>	<b>25</b>	<b>4</b>	<b>142</b>	<b>6</b>	<b>9</b>	<b>1</b>	<b>13</b>	<b>26</b>	<b>104</b>	<b>1263</b>

Table 2

## Descriptive statistics, 2004-2012

This table presents the number of deals for two sub-periods (pre-crisis and crisis) and for four types of deals: domestic deals within the Eurozone, cross-border deals within the Eurozone, cross-border deals from Eurozone to non-Eurozone countries (EUR-NEUR) and cross-border deals from non-Eurozone to Eurozone countries (NEUR-EUR). Pre-crisis period is from January 2004 to February 2009; crisis period is from March 2009 to December 2012. The table also reports the average values (and median values in parentheses) for the following deal-specific and firm-specific variables: CASH=1 if the deal is entirely cash-financed, zero otherwise; DEALVAL is the value of the transaction in \$ million; MV is the acquirer's market value at announcement date in \$ billion; PERCACQ is the percentage stake acquired during the transaction; PRIVATE=1 if the target is a private company, zero otherwise; PTB is the acquirer's price-to-book ratio at announcement date; RELATIVESIZE is the ratio of deal value over acquirer's market value; and SAMEIND=1 if both the acquirer and the target belong to the same industry.

	Domestic within Eurozone <i>pre-crisis crisis</i>	Cross-border within Eurozone <i>pre-crisis crisis</i>	Cross-border from Eurozone to non- Eurozone <i>pre-crisis crisis</i>	Cross-border from non-Eurozone to Eurozone <i>pre-crisis crisis</i>
Nb deals	413 154	189 93	120 39	184 71
CASH	0.278 0.331 (0) (0)	0.275 0.392 (0) (0)	0.446 0.513 (0) (0.5)	0.462 0.599 (0) (1)
DEALVAL	604.5 350.0 (81.7) (66.7)	471.6 411.9 (91.7) (84.5)	1091.5 122.8 (71.1) (51.3)	153.0 583.2 (40.7) (48.2)
MV	0.797 1.043 (0.134) (0.125)	1.206 1.354 (0.303) (0.144)	1.046 0.976 (0.170) (0.202)	0.839 0.810 (0.135) (0.143)
PERCACQ	0.783 0.825 (1) (1)	0.845 0.872 (1) (1)	0.903 0.981 (1) (1)	0.925 0.934 (1) (1)
PRIVATE	0.314 0.334 (0) (0)	0.373 0.258 (0) (0)	0.388 0.269 (0) (0)	0.500 0.408 (0.5) (0)
PTB	2.667 1.674 (2.110) (1.295)	5.494 2.076 (2.070) (1.700)	2.579 2.239 (2.215) (1.880)	3.919 4.081 (2.470) (2.100)
RELATIVESIZE	0.382 0.248 (0.070) (0.065)	0.155 0.156 (0.050) (0.070)	0.232 0.115 (0.055) (0.030)	0.907 0.295 (0.045) (0.040)
SAMEIND	0.557 0.536 (1) (1)	0.701 0.581 (1) (1)	0.700 0.628 (1) (1)	0.723 0.704 (1) (1)

Table 3

## Correlation table

This table presents the correlation coefficients (and significance) across all the variables used in the analysis. The sample is different in each panel. CAR[-2;+2] is the acquirer's cumulative abnormal return around announcement date. CRISIS=1 for the period March 2009–December 2012. CROSS-BORDER=1 if the acquirer and the target are from a different country. CROSS-EUR=1 if the deal happens between a Eurozone and a non-Eurozone country. NEUR-EUR=1 if the deal happens from a non-Eurozone acquirer to a Eurozone target. EXCH is the deviation of the foreign exchange rate at announcement date from its long-term average. PTB is the acquirer's price-to-book ratio at announcement date. UKBIDDER=1 if the acquirer is from the United Kingdom. MARKET/GDP(A) is the stock market capitalisation of the acquirer's country as a percentage of national GDP. PIIGS=1 if the target is from Portugal, Ireland, Italy, Greece or Spain. ESI is the Economic Sentiment Index in the target country at announcement date. MARKET/GDP(T) is the stock market capitalisation of the target's country as a percentage of national GDP. GOVBOND is the 10-year government bond yield of the target country at announcement date. CASH=1 if the deal is entirely cash-financed, zero otherwise. MV is the acquirer's market value at announcement date. PERCACQ is the percentage stake acquired during the transaction. PRIVATE=1 if the target is a private company, zero otherwise. RELATIVESIZE is the deal value divided by the bidder's market value. SAMEIND=1 if both the acquirer and the target belong to the same industry. DIFFGDP is the difference in real GDP between the host and home countries. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels.

*Panel A: Sample of domestic and cross-border deals over the entire period (2004-2012)*

<i>n</i> =1263	CAR[-2;+2]	1	2	3	4	5	6	7	8	9	10
1 CRISIS	-0.008										
2 CROSS-BORDER	0.013	0.022									
3 CROSS-EUR	0.022	-0.026	0.630 ***								
4 NEUR-EUR	0.019	-0.005	0.454 ***	0.720 ***							
5 PTB	-0.020	-0.030	0.039	0.009	0.023						
6 CASH	-0.003	0.078 ***	0.128 ***	0.183 ***	0.147 ***	-0.002					
7 MV	-0.117 ***	0.030	0.042	-0.018	-0.031	-0.011	-0.005				
8 PERCACQ	0.064 **	0.059 **	0.187 ***	0.192 ***	0.143 ***	0.002	-0.011	-0.181 ***			
9 PRIVATE	0.018	-0.048 *	0.075 ***	0.103 ***	0.121 ***	-0.007	-0.042	-0.180 ***	0.232 ***		
10 RELATIVESIZE	0.072 **	-0.026	0.005	0.033	0.053 *	-0.002	0.018	-0.039	0.034	0.026	
11 SAMEIND	0.029	-0.045	0.140 ***	0.113 ***	0.095 ***	0.030	0.042	0.007	-0.019	0.041	0.010

Table 3

Continued.

*Panel B: Sample of cross-border deals over the entire period (2004-2012)*

<i>n=696</i>	CAR[-2;+2]	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 NEUR-EUR	0.019															
2 EXCH	0.044	-0.098 ***														
3 PTB	-0.039	0.006	0.027													
4 UKBIDDER	-0.014	0.780 ***	-0.142 ***	0.020												
5 MARKET/GDP(A)	0.053	0.643 ***	-0.018	0.007	0.604 ***											
6 PIIGS	-0.037	0.115 ***	-0.078 *	0.008	0.160 ***	0.086 **										
7 ESI	-0.024	0.054	-0.029	-0.041	0.066 *	0.309 ***	-0.130 ***									
8 MARKET/GDP(T)	0.024	-0.185 ***	0.020	-0.054	-0.160 ***	0.076 *	-0.205 ***	0.251 ***								
9 GOVBOND	-0.057	-0.109 ***	-0.006	-0.010	-0.058	-0.023	0.263 ***	0.037	0.011							
10 CASH	-0.058	0.131 ***	-0.029	-0.005	0.159 ***	0.076 *	-0.093 ***	-0.037	0.009	-0.017						
11 MV	-0.115 ***	-0.069 *	0.002	-0.020	-0.022	-0.019	0.103 ***	-0.030	-0.020	0.120 ***	-0.004					
12 PERCACQ	0.029	0.101 ***	0.023	0.020	0.108 ***	0.070 *	-0.054	0.000	0.002	-0.114 ***	0.042	-0.187 ***				
13 PRIVATE	0.016	0.130 ***	-0.066 *	-0.019	0.176 ***	0.093 ***	0.104 ***	0.025	-0.052	-0.010	-0.020	-0.188 ***	0.225 ***			
14 RELATIVESIZE	0.047	0.070 *	0.007	-0.001	0.084 **	0.075 *	0.033	0.018	0.055	-0.010	-0.009	-0.038	0.025	0.062		
15 SAMEIND	0.024	0.051	0.050	0.036	0.083 **	0.123 ***	0.033	0.020	-0.019	0.042	0.012	0.027	0.010	-0.006	0.036	
16 DIFFGDP	0.026	-0.130 ***	0.100 ***	0.032	-0.296 ***	-0.090 **	-0.246 ***	0.038	0.012	-0.139 ***	0.022	-0.202 ***	0.147 ***	0.085 ***	-0.063 **	-0.045





Table 4

## Univariate analysis of cumulative abnormal returns

This table reports the average values of the acquirer's cumulative abnormal returns CAR[-2;+2] for two sub-periods (pre-crisis and crisis) and for four types of deals: domestic deals within the Eurozone, cross-border deals within the Eurozone, cross-border deals from Eurozone to non-Eurozone countries (EUR-NEUR) and cross-border deals from non-Eurozone to Eurozone countries (NEUR-EUR). Pre-crisis period is from January 2004 to February 2009; crisis period is from March 2009 to December 2012.

\*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels and are based on Z-test statistics.

	Domestic within Eurozone	Cross-border within Eurozone	<i>Difference</i>	Cross-border Eurozone to Eurozone	from non- Eurozone	Cross-border non-Eurozone Eurozone	from to	<i>Difference</i>	
Pre-crisis	1.936% <i>n=413</i>	1.742% <i>n=189</i>	-0.194%	2.455% <i>n=120</i>		1.608% <i>n=184</i>		-0.847%	
Crisis	1.330% <i>n=154</i>	1.807% <i>n=93</i>	0.476%	0.560% <i>n=39</i>		3.422% <i>n=71</i>		2.862%	***
<i>Difference</i>	-0.606%	0.065%		-1.895%	*	1.815%	**		

Table 5

Regression estimates over the period 2004-2012 for all deals (cross-border and domestic)

This table reports the results of the OLS regression of the acquirer's cumulative abnormal returns: CAR[-2;+2]. All variables have been defined in Table 3. White heteroskedasticity-consistent standard errors are in parentheses. All regressions include industry dummies (not reported). CRISIS=1 between March 2009 and December 2012. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels.

	(1)	(2)	(3)	(4)	(5)
CROSS-BORDER		0.0005 (0.0043)			
CROSS-BORDER*CRISIS		0.0023 (0.0051)			
NEUR-EUR			-0.0034 (0.0062)		
NEUR-EUR*CRISIS			0.0183 (0.0088)	**	
PIIGS				-0.0034 (0.0042)	
PIIGS*CRISIS				-0.0044 (0.0067)	
PTB					-0.0145 (0.013)
PTB*CRISIS					0.0606 (0.0152)
<i>Control variables</i>					
CASH	-0.0012 (0.0036)	-0.0014 (0.0036)	-0.0018 (0.0037)	-0.0016 (0.0037)	-0.0014 (0.0036)
MV	-0.0030 (0.0007)	***-0.0030 (0.0007)	***-0.0030 (0.0007)	***-0.0030 (0.0007)	***-0.0030 (0.0007)
PERCACQ	0.0109 (0.006)	* 0.0104 (0.0059)	* 0.0103 (0.0061)	* 0.0101 (0.0059)	* 0.0106 (0.0061)
PRIVATE	-0.0030 (0.0041)	-0.0029 (0.0042)	-0.0029 (0.0041)	-0.0027 (0.004)	-0.0033 (0.004)
RELATIVESIZE	0.0012 (0.0004)	***0.0013 (0.0004)	***0.0013 (0.0004)	***0.0012 (0.0004)	***0.0013 (0.0004)
SAMEIND	0.0012 (0.0041)	0.0012 (0.004)	0.0011 (0.004)	0.0012 (0.0041)	0.0012 (0.0041)
Constant	0.0051 (0.0105)	0.0050 (0.0105)	0.0060 (0.0105)	0.0067 (0.0106)	0.0056 (0.0105)
R-squared	0.029	0.029	0.033	0.030	0.032
Adj. R-squared	0.019	0.018	0.021	0.019	0.020
Nb Obs.	1257	1257	1257	1257	1257

Table 6

Regression estimates over the period 2004-2012 for cross-border deals

This table reports the results of the OLS regression of the acquirer's cumulative abnormal returns: CAR[-2;+2]. All variables have been defined in Table 3. White heteroskedasticity-consistent standard errors are in parentheses. All regressions include industry dummies (not reported). CRISIS=1 between March 2009 and December 2012. \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
EXCH	0.0218 (0.0841)								-0.0287 (0.098)
EXCH*CRISIS	0.3251 (0.1596)	**							0.3461 * (0.1843)
<i>Cheap financial capital</i>									
PTB		-0.0205 ** (0.0091)							-0.0282 *** (0.0036)
PTB*CRISIS		0.0699 *** (0.013)							0.0659 *** (0.0108)
UKBIDDER			-0.0088 (0.0064)						-0.0114 (0.0074)
UKBIDDER*CRISIS			0.0275 *** (0.0103)						0.0329 ** (0.0129)
MARKET/GDP(A)				0.0099 (0.0063)					
MARKET/GDP(A)*CRISIS				0.0107 * (0.0058)					
<i>Cheap assets</i>									
PIIGS					-0.0047 (0.0067)				-0.0051 (0.0068)
PIIGS*CRISIS					-0.0009 (0.0088)				-0.0083 (0.0141)
ESI						-0.0185 (0.0386)			-0.0098 (0.0468)
ESI*CRISIS						0.0027 (0.0058)			-0.0477 (0.0338)
MARKET/GDP(T)							0.0028 (0.0082)		0.0079 (0.0098)
MARKET/GDP(T)*CRISIS							0.0061 (0.0064)		0.0060 (0.0166)
GOVBOND								-0.0036 * (0.0021)	-0.9413 (0.7636)
GOVBOND*CRISIS								0.0010 (0.0012)	0.9493 (0.7729)
<i>Control variables</i>									
CASH	-0.0098 (0.0051)	* -0.0094 * (0.005)	-0.0098 ** (0.0049)	-0.0109 ** (0.005)	-0.0093 * (0.0051)	-0.0098 * (0.0051)	-0.0093 * (0.005)	-0.0092 * (0.005)	-0.0112 ** (0.0052)
MV	-0.0033 (0.0011)	***-0.0033 *** (0.0011)	-0.0033 *** (0.0011)	-0.0033 *** (0.0011)	-0.0032 *** (0.0011)	-0.0032 *** (0.0011)	-0.0033 *** (0.0011)	-0.0032 *** (0.0011)	-0.0029 *** (0.0011)
PERCACQ	0.0043 (0.0102)	0.0034 (0.0101)	0.0031 (0.0104)	0.0013 (0.0101)	0.0031 (0.0101)	0.0031 (0.0106)	0.0028 (0.0101)	0.0020 (0.01)	0.0021 (0.0106)
PRIVATE	-0.0020 (0.0059)	-0.0021 (0.0058)	-0.0010 (0.0056)	-0.0017 (0.006)	-0.0010 (0.0057)	-0.0045 (0.0063)	-0.0009 (0.0058)	-0.0011 (0.006)	-0.0054 (0.0062)
RELATIVESIZE	0.0008 (0.0003)	***0.0008 *** (0.0003)	0.0009 *** (0.0003)	0.0007 *** (0.0003)	0.0008 *** (0.0003)	0.0008 *** (0.0003)	0.0008 *** (0.0003)	0.0008 *** (0.0003)	0.0009 *** (0.0003)
SAMEIND	0.0009 (0.0056)	0.0016 (0.0055)	0.0013 (0.0055)	0.0006 (0.0053)	0.0016 (0.0056)	0.0042 (0.0058)	0.0020 (0.0056)	0.0022 (0.0055)	0.0048 (0.0059)
DIFFGDP	0.0002 (0.0019)	0.0006 (0.0018)	-0.0001 (0.002)	0.0005 (0.0018)	0.0000 (0.0019)	0.0018 (0.0021)	0.0003 (0.0018)	0.0001 (0.0019)	0.0022 (0.0022)
Constant	0.0124 (0.0154)	0.0123 (0.0155)	0.0141 (0.0154)	0.0040 (0.0159)	0.0130 (0.0156)	0.0341 (0.0444)	0.0086 (0.0175)	0.0266 (0.0175)	0.0652 (0.051)
R-squared	0.030	0.032	0.033	0.032	0.026	0.029	0.026	0.028	0.059
Adj. R-squared	0.007	0.009	0.010	0.009	0.003	0.004	0.003	0.005	0.014
Nb Obs.	694	694	694	694	694	666	694	694	666

Table 7

Regression estimates over the period 2009-2012 for cross-border deals

This table reports the results of the OLS regression of the acquirer's cumulative abnormal returns: CAR[-2;+2]. All variables have been defined in Table 3. White heteroskedasticity-consistent standard errors are in parentheses. All regressions include industry dummies (not reported). \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
EXCH	0.3442 (0.1418)	**							0.3511 (0.1534)
<i>Cheap financial capital</i>									
PTB		0.0524 (0.0106)	***						0.0426 (0.0112)
UKBIDDER			0.0281 (0.0108)	**					0.0312 (0.0113)
MARKET/GDP(A)				0.0331 (0.011)	***				
<i>Cheap assets</i>									
PIGS					-0.0080 (0.0096)				-0.0165 (0.0134)
ESI						0.0317 (0.0473)			0.0062 (0.0522)
MARKET/GDP(T)							0.0074 (0.011)		0.0198 (0.0125)
GOVBOND								0.0007 (0.002)	0.4715 (0.3251)
<i>Control variables</i>									
CASH	-0.0115 (0.0083)	-0.0091 (0.0081)	-0.0143 * (0.0082)	-0.0149 * (0.0081)	-0.0089 (0.0082)	-0.0099 (0.0082)	-0.0087 (0.0081)	-0.0084 (0.0082)	-0.0208 ** (0.0088)
MV	-0.0050 (0.0021)	** -0.0050 (0.0021)	** -0.0048 (0.0021)	** -0.0052 (0.0021)	** -0.0050 (0.0022)	** -0.0048 (0.0021)	** -0.0051 (0.0021)	** -0.0051 (0.0022)	** -0.0046 (0.0021)
PERCACQ	-0.0148 (0.0168)	-0.0179 (0.0165)	-0.0246 (0.0167)	-0.0217 (0.0168)	-0.0205 (0.0162)	-0.0216 (0.0167)	-0.0175 (0.016)	-0.0180 (0.0165)	-0.0253 (0.017)
PRIVATE	0.0005 (0.0095)	0.0015 (0.0097)	-0.0027 (0.0101)	-0.0012 (0.0095)	0.0030 (0.0098)	-0.0003 (0.0101)	0.0034 (0.0096)	0.0030 (0.0097)	-0.0069 (0.0103)
RELATIVESIZE	0.0107 (0.0038)	***0.0111 (0.004)	***0.0109 (0.0035)	***0.0101 (0.0037)	***0.0109 (0.004)	***0.0115 (0.0041)	***0.0109 (0.0039)	***0.0112 (0.004)	***0.0107 (0.0033)
SAMEIND	-0.0092 (0.0101)	-0.0080 (0.0098)	-0.0110 (0.0096)	-0.0110 (0.0095)	-0.0068 (0.0099)	-0.0079 (0.01)	-0.0068 (0.0099)	-0.0073 (0.0099)	-0.0137 (0.01)
DIFFGDP	0.0017 (0.0027)	0.0024 (0.0027)	0.0033 (0.0028)	0.0021 (0.0026)	0.0016 (0.0028)	0.0022 (0.003)	0.0019 (0.0027)	0.0021 (0.003)	0.0048 (0.0032)
Constant	0.0287 (0.0235)	0.0268 (0.0246)	0.0333 (0.0247)	0.0126 (0.0243)	0.0316 (0.0251)	-0.0004 (0.051)	0.0216 (0.0249)	0.0251 (0.026)	0.0040 (0.0681)
R-squared	0.115	0.106	0.128	0.134	0.094	0.098	0.093	0.091	0.182
Adj. R-squared	0.044	0.034	0.058	0.064	0.021	0.023	0.020	0.018	0.083
Nb Obs.	203	203	203	203	203	197	203	203	197

Table 8

## Robustness test with legal system variables (cross-border deals only)

This table reports the results of the OLS regression of the acquirer's cumulative abnormal returns: CAR[-2;+2]. COMMONLAW=1 if the acquirer is located in a common law country. WEAKERLAW=1 if the acquirer is located in a common law country and the target is located in a civil law country. In Panel A, CRISIS=1 between March 2009 and December 2012. All other variables have been defined in Table 3. White heteroskedasticity-consistent standard errors are in parentheses. All regressions include industry dummies (not reported). \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% levels.

	<i>Panel A: 2004-2012</i>				<i>Panel B: 2009-2012</i>			
	(1)	(2)			(1)	(2)		
<i>Legal system variables</i>								
COMMONLAW	-0.0104 (0.0057)	*			0.0228 (0.0093)	**		
COMMONLAW*CRISIS	0.0243 (0.0087)	***						
WEAKERLAW		-0.012 (0.0058)	**			0.019471 (0.0099)	*	
WEAKERLAW*CRISIS		0.026 (0.0098)	***					
<i>Control variables</i>								
CASH	-0.0095 (0.0049)	*	-0.009 (0.005)	*	-0.0143 (0.0083)	*	-0.0123 (0.0082)	
MV	-0.0033 (0.0011)	***	-0.003 (0.0011)	***	-0.0047 (0.0021)	**	-0.0049 (0.0021)	**
PERCACQ	0.0030 (0.0103)		0.003 (0.0102)		-0.0237 (0.0171)		-0.0210 (0.0168)	
PRIVATE	0.0001 (0.0057)		-0.001 (0.0057)		-0.0007 (0.0098)		-0.0001 (0.0099)	
RELATIVESIZE	0.0009 (0.0003)	***	0.001 (0.0003)	***	0.0112 (0.0036)	***	0.0110 (0.0036)	***
SAMEIND	0.0015 (0.0055)		0.001 (0.0055)		-0.0100 (0.0097)		-0.0093 (0.0097)	
DIFFGDP	-0.0002 (0.0019)		0.000 (0.0019)		0.0026 (0.0027)		0.0024 (0.0028)	
Constant	0.0145 (0.0153)		0.014 (0.0154)		0.0324 (0.0248)		0.0299 (0.0246)	
R-squared	0.0330		0.032		0.118		0.110	
Adj. R-squared	0.0102		0.010		0.047		0.039	
Nb Obs.	694		694		203		203	